

We claim:

1. A method for power saving routing between a source node and a destination node in wireless networks, comprising:

(a) a first step of setting an optimal integer value n for reducing power consumed

5 between the source node and the destination node;

(b) a second step of setting $n-1$ concentric circles that have the destination node as their center and dividing a distance d between the source node and the destination node by n ;

(c) a third step of setting a current execution node to the source node;

(d) a fourth step wherein said current execution node selects nodes located within

10 a predetermined distance from the circle that is closest to the current execution node in the

direction of the destination node as candidate nodes, and selects a node for which power

consumed between the node and the current execution node is minimum from the candidate

nodes as an intermediate node; and

(e) a fifth step of setting the current execution node as the selected intermediate

15 node until routing between the source node and the destination node is finished and returning to

the fourth step.

Application of: Choi et al.

2. The method as claimed in claim 1, wherein the predetermined distance is:

$$\frac{d}{n} - \frac{d}{2n} \text{ to } \frac{d}{n} + \frac{d}{2n}.$$

3. The method as claimed in claim 1, wherein the fourth step ignores the selected

5 intermediate node when the selected intermediate node satisfies the condition,

$$u(r) + u\left(\frac{d}{n}\right) > u\left(\frac{2d}{n}\right) \text{ (r is a distance between the current execution node and the selected}$$

intermediate node, u(x) is power consumption between two nodes having a distance x between

them), and selects the intermediate node again for the second closest circle in the direction of the

destination node.

10

4. The method as claimed in claim 2, wherein the fourth step ignores the selected

intermediate node when the selected intermediate node satisfies the condition,

$$u(r) + u\left(\frac{d}{n}\right) > u\left(\frac{2d}{n}\right) \text{ (r is a distance between the current execution node and the selected}$$

intermediate node, u(x) is power consumption between two nodes having a distance x between

15 them), and selects the intermediate node again for the second closest circle in the direction of the

destination node.

5. The method as claimed in claim 1, wherein the fourth step finds a neighboring node for which $u(r)+v(s)$ (r is a distance between the current execution node and an arbitrary neighboring node, s is a distance between the current execution node and the destination node, and $v(x)$ is minimum power consumption expected between two nodes having a distance x between them)

5 has a minimum value, and then repeatedly performs the first to fifth steps, having the neighboring node as the source node, when there is no candidate node.

6. The method as claimed in claim 2, wherein the fourth step finds a neighboring node for which $u(r)+v(s)$ (r is a distance between the current execution node and an arbitrary neighboring node, s is a distance between the current execution node and the destination node, and $v(x)$ is minimum power consumption expected between two nodes having a distance x between them)

10 node, s is a distance between the current execution node and the destination node, and $v(x)$ is

has a minimum value, and then repeatedly performs the first to fifth steps, having the neighboring node as the source node, when there is no candidate node.